REMARKS

Claims 1-17 are pending in this application, of which claims 4-11 have been withdrawn from consideration pursuant to the provisions of 37 C.F.R. §1.142(b). Claims 1-3 and 12-17 are active in this application, of which claims 1 and 12 are independent.

Claims 1-3 and 12-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blumenau et al. (U.S. Patent No. 6,260,120, hereinafter "Blumenau") in view of McClannahan (U.S. Patent No. 6,438,670) and further in view of Wang et al. (U.S. Patent No. 6,834,326, hereinafter "Wang"). This rejection is respectfully traversed.

Blumenau, McClannahan, and Wang, individually or in combination, do not disclose or suggest a host device including all the limitations recited in independent claim 1, which reads:

> 1. A host device operative to input data to a storage device for storing data and output data from the storage device, the host device comprising a controller which
>
> divides a series of cryptographic processing for encrypting data to be secured and inputting or outputting the same into a plurality of procedures, and
>
> issues to the storage device a command for making the storage device execute a procedure to be executed on the storage-device side out of the procedures,
>
> wherein the controller obtains information for estimating time necessary to execute the command from the storage device prior to the issuance of the command, sets a wait time for the command based on the obtained information, issues the command to the storage device via a bus electrically connecting the host device and the storage device, releases the bus for another command, and waits the time set for the command before it issues a command for the next procedure to the storage device.

In the Office Action, the Examiner asserted that Blumenau teaches the claimed controller configured to divide a series of cryptographic processing and issue a command to the storage device. With respect to the limitation "divides a series of cryptographic processing...," the Examiner stated that "a key generation, encryption, decryption, inputting data to be encrypted, outputting the decrypted data, and any other intermediary steps in the cryptographic processing

from start to end are considered as plurality of procedures" (see page 3 of the Office Action). Even if the Examiner's assertion is assumed proper for the sake of this response, Blumenau does not teach, and the Examiner did not explain why Blumenau teaches, a controller issues to the storage device a command for making the storage device execute a procedure to be executed on the storage-device side out of the procedures. The portions of Blumenau cited by the Examiner (column 35, lines 5-25 and lines 53-67) appear not to teach that a controller issues a command to a storage device such that the storage device performs, for example, a key generation, encryption, decryption, inputting data to be encrypted, outputting the decrypted data, and so on. This shows that the Examiner's assertion regarding the limitation "divides a series of cryptographic processing... into a plurality of procedures" is illogical.

On the other hand, the subject matter of the present application can divide cryptographic input/output processing into a plurality of procedures and issuing commands accordingly. The subject matter disclosed in the present application can issue commands corresponding to the respective steps and release a bus frequently as a result, instead of issuing a command for a block of steps. Therefore, it is possible to let the bus be available for, for example, data transfer before a subsequent command is issued, improving efficiency. Blumenau is silent on the claimed limitations and the advantages which can be obtained from those limitations.

According to claim 1, after issuing a command corresponding to an individual step, the device can wait for a period of time estimated to be required for the execution of a command, before issuing a subsequent command, instead of frequently issuing inquiries to the storage device to determine whether the execution of the previous command is completed, before issuing a subsequent command. This approach can further improve the efficiency, and is not taught by Blumenau, as admitted by the Examiner.

The subject matter of the present application further requires acquiring information in advance for estimating the time required to execute a command from the storage device in order to set a wait time. Accordingly, the time required to execute a command can properly be estimated adaptively, even when the storage device connected to the host device is changed. McClannahan teaches controlling a delay performance of a memory control operation to meet a predetermined timing parameter for a memory storage device (see, e.g., the abstract). However, the reference fails to disclose acquiring from the storage device information for estimating the time required for the execution of a command. Claim 1 recites, "the controller obtains information for estimating time necessary to execute the command from the storage device prior to the issuance of the command" (emphasis added).

Wang teaches connecting redundant disk drives to a controller via a network, in which disks are controlled by commands transported across the network. Wang is silent on, among other things, the above discussed limitations of claim 1, and thus does not cure the deficiencies of the combination of Blumenau and McClannahan.

Based on the foregoing, Blumenau, McClannahan, and Wang, individually or in combination, do not disclose or suggest a host device including all the limitations recited in independent claim 1. Dependent claims 2 and 3 are also patentably distinguishable over Blumenau, McClannahan, and Wang at least because these claims respectively include all the limitations recited in independent claim 1.

The above discussion is applicable to independent claim 12 because the claim includes the limitations similar to the above-discussed limitations of independent claim 1. Dependent claims 13-17 are thus patentably distinguishable over Blumenau, McClannahan, and Wang at

least because these claims respectively include all the limitations recited in independent claim 12 .

Applicants, therefore, respectfully solicit withdrawal of the rejection of claims 1-3 and 12-17 under 35 U.S.C. § 103 for obviousness as predicated upon Blumenau, McClannahan, and Wang, and favorable consideration of the claims.

If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Tomoki Tanida
Registration No. 60,453

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 SAB:TT:amz
Facsimile: 202.756.8087
Date: May 20, 2009

Please recognize our Customer No. 20277 as our correspondence address.